

UC-8100 Series

Arm Cortex-A8 300 MHz/600 MHz/1 GHz IIoT gateway with 1 mini PCIe expansion slot for a wireless module, -10 to 60°C operating temperature



Features and Benefits

- Armv7 Cortex-A8 300/600/1000 MHz processor
- Dual auto-sensing 10/100 Mbps Ethernet ports
- Rich programmable LEDs and a programmable button for easy installation and maintenance
- Long-term Linux support until 2027; includes bug fixes and security patches
- Debian 9 open platform

Certifications



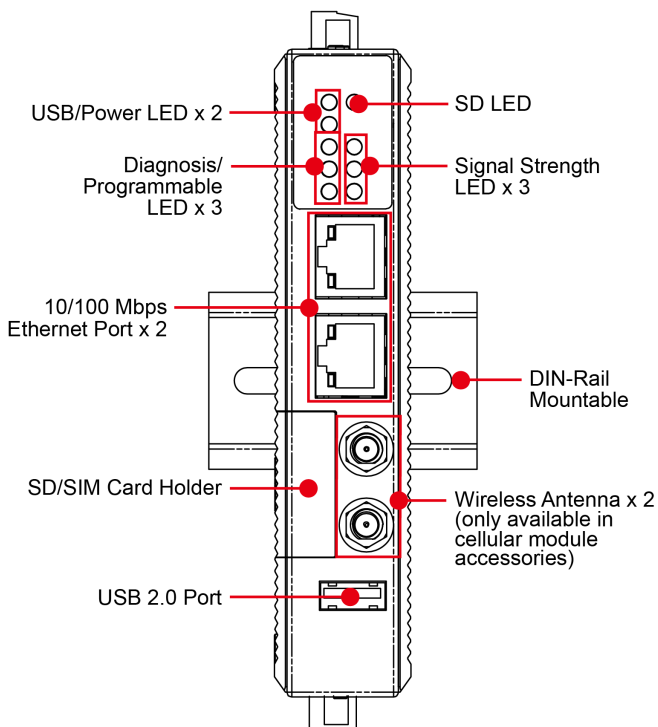
Introduction

The UC-8100 computing platform is designed for embedded data-acquisition applications. The computer comes with one or two RS-232/422/485 serial ports and dual 10/100 Mbps Ethernet LAN ports, as well as a mini PCIe slot to support cellular modules. These versatile communication capabilities let users efficiently adapt the UC-8100 to a variety of complex communications solutions.

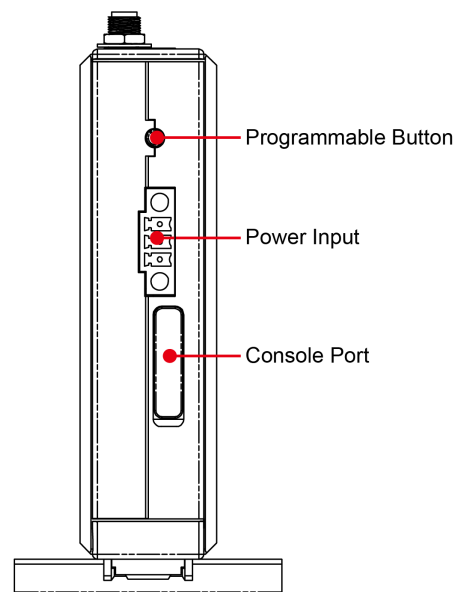
The UC-8100 is built around a Cortex-A8 Arm-based processor that has been optimized for use in energy monitoring systems, but is widely applicable to a variety of industrial solutions. With flexible interfacing options, this tiny embedded computer is a reliable and secure gateway for data acquisition and processing at field sites as well as a useful communication platform for many other large-scale deployments.

Appearance

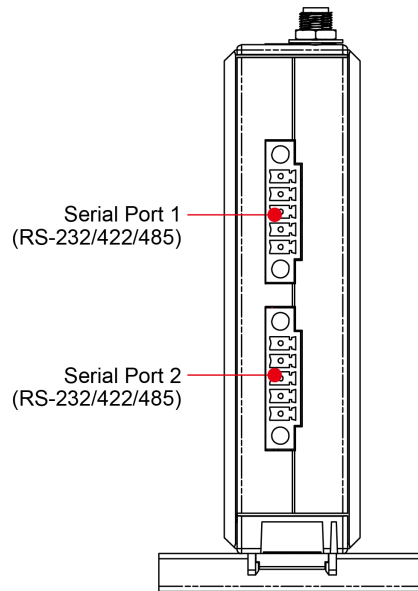
Front View



Top View



Bottom View



Specifications

Computer

CPU	UC-8131-LX: Armv7 Cortex-A8 300 MHz UC-8132-LX: Armv7 Cortex-A8 300 MHz UC-8162-LX: Armv7 Cortex-A8 600 MHz UC-8112-LX: Armv7 Cortex-A8 1 GHz
DRAM	UC-8112-LX: 512 MB DDR3 UC-8131-LX: 256 MB DDR3 UC-8132-LX: 256 MB DDR3 UC-8162-LX: 512 MB DDR3
Supported OS	Moxa Industrial Linux 1 (Debian 9, kernel 4.4), 2027 EOL See www.moxa.com/MIL
Storage Pre-installed	8 GB eMMC
Storage Slot	SD slots x 1

Computer Interface

Ethernet Ports	Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2
Serial Ports	UC-8112-LX: RS-232/422/485 ports x 2 (software-selectable, [X2] connector) UC-8131-LX: RS-232/422/485 ports x 1 (software-selectable, [X2] connector) UC-8132-LX: RS-232/422/485 ports x 2 (software-selectable, [X2] connector) UC-8162-LX: RS-232/422/485 ports x 2 (software-selectable, [X2] connector)
USB 2.0	USB 2.0 hosts x 1, type-A connectors
Expansion Slots	UC-8112-LX: mPCIe slots x 1 UC-8131-LX: mPCIe slots x 1 UC-8132-LX: mPCIe slots x 1 UC-8162-LX: mPCIe slots x 1
Number of SIMs	UC-8112-LX: 1 UC-8131-LX: 1 UC-8132-LX: 1 UC-8162-LX: 1
SIM Format	Mini
Buttons	Reset button
Console Port	RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)

Ethernet Interface

Magnetic Isolation Protection	1.5 kV (built-in)
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Serial Interface

Baudrate	300 bps to 921.6 kbps
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS, XON/XOFF ADDC (automatic data direction control) for RS-485 RTS Toggle (RS-232 only)

Serial Signals

RS-232	TxD, RxD, RTS, CTS, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND

LED Indicators

System	Power x 1 SD slots x 1 Programmable x 3 USB x 1
Wireless Signal Strength	Cellular/Wi-Fi x 3

Power Parameters

Input Voltage	12 to 24 VDC
Input Current	480 mA @ 12 VDC 225 mA @ 24 VDC
Power Consumption	5.4 W

Reliability

Alert Tools	RTC (real-time clock)
Automatic Reboot Trigger	Built-in WDT

Physical Characteristics

Dimensions	101 x 27 x 128 mm (3.98 x 1.06 x 5.04 in)
Weight	224 g (0.5 lb)
Housing	Plastic
Installation	DIN-rail mounting Wall mounting (with optional kit)

Environmental Limits

Operating Temperature	-10 to 60°C (14 to 140°F)
Storage Temperature (package included)	-20 to 80°C (-4 to 176°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Shock	IEC 60068-2-27
Vibration	2 Grms @ IEC 60068-2-64, random wave, 5-500 Hz, 1 hr per axis (without USB devices attached)

Standards and Certifications

EMC	EN 55032/35 BIS UKCA UC-8162 KC UC-8112 BSMI
EMI	EN 55032 Class A EN 61000-6-4 Class A FCC Part 15B Class A ICES-003 Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8 PFMF
Safety	UL 60950-1
International Approval	BIS CE FCC ISED UKCA UC-8162 KC UC-8112 BSMI
Green Product	RoHS, CRoHS, WEEE

MTBF

Time	UC-8131-LX: 1,465,546 hrs UC-8132-LX/8162-LX: 1,195,173 hrs UC-8112-LX: 1,149,242 hrs
Standards	Telcordia (Bellcore) Standard

Warranty

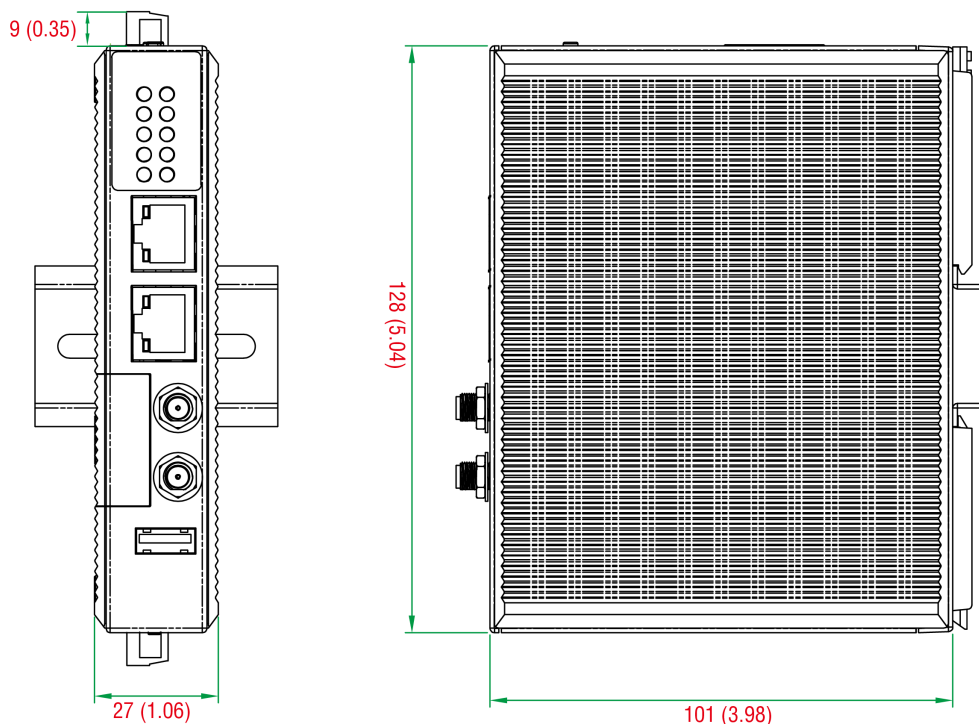
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x UC-8100 Series computer
Cable	1 x console cable
Installation Kit	1 x power jack
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	CPU	RAM	Storage	Storage Slot	mPCIe Socket for Wireless Module	Serial Ports
UC-8131-LX	Armv7 Cortex-A8 300 MHz	256 MB	8 GB eMMC	SD Card	1	1
UC-8132-LX	Armv7 Cortex-A8 300 MHz	256 MB	8 GB eMMC	SD Card	1	2
UC-8162-LX	Armv7 Cortex-A8 600 MHz	512 MB	8 GB eMMC	SD Card	1	2
UC-8112-LX	Armv7 Cortex-A8 1 GHz	512 MB	8 GB eMMC	SD Card	1	2

Accessories (sold separately)

Power Adapters

PWR-12150-UK-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, United Kingdom (UK) plug, -40 to 75°C operating temperature
PWR-12150-EU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, Continental Europe (EU) plug, -40 to 75°C operating temperature
PWR-12150-CN-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, China (CN) plug, -40 to 75°C operating temperature
PWR-12150-USJP-SA-T	Locking barrel plug, 12 VDC 1.5 A, 100 to 240 VAC, United States/Japan (US/JP) plug, -40 to 75°C operating temperature
PWR-12150-AU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, Australia (AU) plug, -40 to 75°C operating temperature

Cellular Wireless Modules

UC-8100 LTE-CAT4-AP	Telit LE910C4-AP LTE Cat. 4 mini card with 2 M2 screws for the APAC region
UC-8100 LTE-CAT4-EU	Telit LE910C4-EU LTE Cat. 4 mini card with 2 M2 screws for the EMEA region

Wi-Fi Wireless Modules

WiFi-BGN	802.11ac/a/b/g/n Wi-Fi module x1, i-PEX MHF male connector to RP-SMA female connector x2, ANT-WDB-ARM-02 x1, M2 screw x2
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Antennas

ANT-WDB-ARM-02	2.4/5 GHz, omni-directional rubber duck antenna, 2 dBi, RP-SMA (male)
ANT-LTE-OSM-03-3m BK	700-2700 MHz, multi-band antenna, specifically designed for 2G, 3G, and 4G applications, 3 m cable
ANT-LTE-ASM-05 BK	704-960/1710-2620 MHz, LTE stick antenna, 5 dBi
ANT-LTEUS-ASM-01	GSM/GPRS/EDGE/UMTS/HSPA/LTE, omni-directional rubber duck antenna, 1 dBi
ANT-LTE-OSM-06-3m BK MIMO	Multiband antenna with screw-fastened mounting option for 700-2700/2400-2500/5150-5850 MHz frequencies
ANT-LTE-ASM-04 BK	704-960/1710-2620 MHz, LTE omni-directional stick antenna, 4.5 dBi

Cables

CBL-F9DPF1x4-BK-100	Console cable with 4-pin connector, 1 m
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Wall-Mounting Kits

WALLMOUNT-8100-01	Wall-mounting kit for the UC-8100 with screws
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